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MONTANA STATE DEPARTMENT OF HEALTH
Communicable Disease Notes and Comments
April 29, 1970

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DIPHTHERIA OUTBREAK IN MISSOULA

By this time most of the readers will already be aware that cases of diphtheria have occurred in Missoula and that extensive immunization campaigns and efforts to locate contacts have been in process during the past 10 days.

As of April 27, two cases (including one death) have been identified and confirmed by isolation of toxogenic *Corynebacterium diphtheriae* from throat swabs; probably Intermediate type. The first case, an older man living alone in a hotel, apparently had been ill for some time when he presented to a physician on Monday, April 13. He died on Wednesday, April 15, despite vigorous therapy; a nasopharyngeal membrane was present. The second case, a construction worker in his 40's, became ill on Wednesday, April 15, but continued to work full-time, eat, and drink, until finally seeing a physician on Sunday, April 19. The diagnosis of diphtheria made on clinical grounds; he received diphtheria antitoxin and antibiotics and has made a satisfactory recovery.

Investigations were started on Friday, when the health department was notified of the probable diagnosis in the first case. Potentially close contacts were found, interviewed, immunized with Td vaccine, examined for presence of diphtheritic signs and symptoms, and cultured. This included examination or review of all hospital employees of the hospital where the first patient died. All persons with a history of close contact and all persons whose throat and nose cultures showed possible *Corynebacterium* species, were given erythromycin in therapeutic doses without waiting for positive identification; no person required prophylactic diphtheria antitoxin.

When the second patient was interviewed on Sunday, it became clear that only two places were common to both men--a bar and bar-restaurant. Both ate at the restaurant fairly often and spent a fair amount of time in the bar. These places and their employees were then examined, in addition to other contacts of the second case. Persons who had frequented either (or both) places within the prior ten days were urged to be seen by a physician. The evidence accumulated to implicate these places as the site of transition; but the evidence also became strongly against any transmission by food or drink, and in favor of an air-borne, or droplet-borne, transmission hypothesis.

Follow-up culturing of suspect infected persons continues, as well as modified quarantine measures against suspect persons who were food-handlers or worked with children. Diphtheria toxoid immunization was administered to many persons in the community, through several sources. No further cases have been recognized to date.

EDITORIAL COMMENT

In large part due to declining immunity rates, clinical diphtheria may continue to be seen in those parts of the population with poor immunity, especially children, and adults with poor hygienic immunity. Erythromycin has been shown in recent studies to be highly effective in the elimination of the infectious carrier state, as well as in therapy of clinical cases. Diphtheria antitoxin is a crucial part of therapy, and should be used in addition to antibiotics.

